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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,259	03/22/2004	Shizhong Zhao	20030813-001A	1937
34160 7590 02/05/2007 SUD-CHEMIE INC. 1600 WEST HILL STREET LOUISVILLE, KY 40210			EXAMINER NGUYEN, CAM N	
			ART UNIT	PAPER NUMBER
			1754	

  

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/05/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/806,259

Applicant(s)

ZHAO ET AL.

Examiner

Cam N. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11/27/06 (an election).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### Response to Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-18, in the reply filed on November 27, 2006 is acknowledged.

### Response to Amendment

2. The amendment and remarks, filed on November 27, 2006, has been made of record and entered. Claims 19-20 have been canceled.

Claims 1-18 are currently pending in the application and being under examination.

### Claim Objections

3. Claims 6-10 & 16-18 are objected to because of the following informalities:  
  
In line 1 of these claims, the word "with" should be replaced with --having--.  
  
Appropriate correction is required.

### Claim Rejections - 35 USC § 112 (Second Paragraph)

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.
5. Claims 11-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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A. Claim 11 recites the limitation "the stabilizer" in line 1. There is insufficient antecedent basis for this limitation in the claim.

B. Claim 12 recites the limitation "the alumina" in line 4. There is insufficient antecedent basis for this limitation in the claim.

**Claim Rejections - 35 USC § 102(b)**

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Shoji et al., "hereinafter referred to as Shoji", (US Pat. 5,773,589).

Shoji discloses a catalyst for steam-reforming of lower hydrocarbons, comprising a support comprising  $\text{Al}_2\text{O}_3$  and 0.5 to 25 percent by weight, per the catalyst, of CaO, at least part of CaO forming a compound(s) with  $\text{Al}_2\text{O}_3$ , and Ni as the active component (see col. 6, claim 1). The catalyst comprises 3 to 20 percent by weight of nickel (see col. 6, claim 2). The catalyst pore volume of 0.2 ml/g or larger is disclosed at col. 3, ln 4-5. Furthermore, the catalysts may contain, as impurities or additives, such as alkali metals, Group IIIA elements, and other elements such as lanthanum, silicon, titanium, and zirconium (see col. 4, ln 52-57). In Example 1 of the reference, Shoji specifically teaches a catalyst comprising a support and 7.6 wt% of nickel based on the whole catalyst was produced. The support was constituted of CaO and  $\alpha\text{-Al}_2\text{O}_3$ , with the content of CaO being 6 wt% based on the whole catalyst, and contained

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no free CaO detectable by X-ray diffractometry. All of the CaO in the support was present as calcium aluminate compounds.

Regarding the intended use limitation on “for use in a feed streams containing steam, CO<sub>2</sub>, and CO at levels such that ... of sulfur compounds” in the preamble, it is noted that this is merely a recitation of the intended use of the claimed catalyst composition, and that the claimed catalyst composition does not depend on the preamble recitation for completeness, but instead the limitations of the catalyst composition are able to stand alone; see MPEP. 2111.02 and 2114.

Regarding claims 1, 11-12, & 15, while Shoji is silent with respect to the specific amount of the impurities or additives which may be contained in the disclosed catalyst, it is inherent that the disclosed impurities or additives amounts of the metal(s) contained in the disclosed catalyst would be at least the minimal amount of 0.01 wt% that applicants claiming. This would appear meets the claimed limitation of “from about 0.1 wt% to about 20 wt% of titanium”.

Regarding claims 1, 4- 5, & 12-14, the claimed calcium and nickel amounts are met by the teaching of the reference ((see Shoji at col. 6, claims 1 & 2).

Regarding claims 6-9 & 16-17, it is considered the claimed catalyst surface area and nickel surface area are inherently met by the teaching of the reference in view of the same catalyst and the same metal amounts disclosed. Also, in view of the teaching at col. 2, ln 36-45 of reference, there is a teaching that for increasing the specific surface area of the active component, a support having an increased specific BET surface area should be used, etc.

Regarding claims 10 & 18, the claimed catalyst pore volume is met by the reference (see Shojio at col. 3, ln 4-5).

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There is no patentable distinction seen between the disclosed catalyst and that disclosed by Shoji. Thus, the claims are anticipated by the teaching of the reference.

#### Citations

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. All references cited are for related art. See PTO-892 Form prepared attached.

#### Conclusion

9. Claims 1-18 are pending. Claims 1-18 are rejected. No claims are allowed.

#### Contacts

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cam N Nguyen, whose telephone number is 571-272-1357. The examiner can normally be reached on M-F, 9:00 AM - 6:30 PM, at alternative work site.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Cam N. Nguyen/

Nguyen/cnn

Primary Examiner

January 30, 2007

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